

## Factors that Influence Good Bluegill Populations

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Good bluegill fishing is no accident: research has shown a multitude of factors affect bluegill populations. Some of the most important include lake shape and size, water quality, and watershed size and land practices within the watershed. Predation by largemouth bass upon bluegills, in certain situations, can affect bluegill populations. Anglers and angler harvest really are not important to bluegill populations.

The single most important factor, by far, which can make or break a bluegill fishery is the shape of the lake. Most important, the lake should be deep and steep-sided. Deepest lakes with excellent bluegill populations were Red Haw (pre-carp), Viking, Nine Eagles, Hawthorn and Iowa.

Water quality is, of course, important. Lakes with lowest phosphorus concentrations had better bluegill populations. These lakes included Yellow Smoke, Red Haw (pre-carp), Nine Eagles, and Lacey-Keosauqua Lakes. Lakes with better water quality in terms of lower turbidity were identical to those with the lowest phosphorus concentrations.

Watershed area: lake area ratio and total phosphorus were highly significant. The larger the ratio, the greater the concentration of phosphorus. Similarly, water clarity was significantly related to watershed area: lake area ratio. Land use and conservation practices within the watershed were also important, indicating the importance of good bluegill fisheries. Two lakes at opposite ends of the spectrum were Bobwhite and Red Haw Lakes. The former had a large, intensively row cropped watershed; water quality was poor and the bluegill population was dismal. At the other extreme was Red Haw Lake, where the water quality was good, the bluegill population was excellent (pre-carp), and the watershed was small and well managed in timber, forbs and grasses.

Largemouth bass populations tended to show some degree of influence on bluegill populations. The best bluegill populations were associated with bass of slow growth and poor body condition. Furthermore, the bass populations with the greatest proportion of intermediate sized bass were associated with excellent bluegills.

Anglers least affected bluegill populations. The best bluegill populations were found at lakes with the highest fishing pressure, while the poorest bluegill lakes were found at lakes with the lowest fishing pressure.